| 1 | 1007 | | | |
|-----|---------|--|--------------------|-----------------------------|
| l I | 1086 | ((138/125) or (138/153) or (138/104)).CCLS. | USPAT; | Time stamp 2004/06/30 12:18 |
| | | | US-PGPUB | |
| 2 | 1084 | (428/36.91).CCLS. | USPAT; | 2004/06/30 12:18 |
| | | | US-PGPUB | |
| 3 | 274 | (138/130).CCLS. | USPAT; | 2004/06/30 12:29 |
| | | | US-PGPUB | |
| 4 | 579 | (138/122).CCLS. | USPAT; | 2004/06/30 12:29 |
| | | | US-PGPUB | |
| 5 | 2652 | (((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 12:29 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.) | US-PGPUB | |
| 6 | 2599 | ((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 12:30 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((138/130).CCLS.) | US-PGPUB | |
| 7 | 632805 | shaft | USPAT; | 2004/06/30 12:30 |
| | | | US-PGPUB | |
| 8 | 227535 | helical or spiral | USPAT; | 2004/06/30 12:30 |
| | | | US-PGPUB | |
| 9 | 1908462 | crossed or cross or overlapping or overlapped | USPAT; | 2004/06/30 12:30 |
| | | | US-PGPUB | |
| 10 | 294782 | reinforc\$ | USPAT; | 2004/06/30 12:31 |
| | 1000 | | US-PGPUB | 2004/06/20 12 21 |
| 11 | 1030 | (helical or spiral) same (crossed or cross or overlapping or | USPAT; | 2004/06/30 12:31 |
| 12 | 202 | overlapped) same reinforc\$ | US-PGPUB | 2004/06/20 12:21 |
| 12 | 282 | shaft and ((helical or spiral) same (crossed or cross or overlapping | USPAT; | 2004/06/30 12:31 |
| 12 | 105 | or overlapped) same reinforc\$) | US-PGPUB | 2004/06/20 12:29 |
| 13 | 105 | (shaft and ((helical or spiral) same (crossed or cross or overlapping | USPAT; US-PGPUB | 2004/06/30 12:38 |
| 14 | 177 | or overlapped) same reinforc\$)) and rib\$ (shaft and ((helical or spiral) same (crossed or cross or overlapping | USPAT; | 2004/06/30 12:45 |
| 14 | 1// | or overlapped) same reinforc\$)) not ((shaft and ((helical or spiral) | US-PGPUB | 2004/00/30 12.43 |
| | | same (crossed or cross or overlapping or overlapped) same | 05-101015 | |
| | _ | reinforc\$)) and rib\$) | | |
| 15 | 297 | ((helical or spiral) same (crossed or cross or overlapping or | USPAT; | 2004/06/30 12:45 |
| | | overlapped) same reinforc\$) and rib\$ | US-PGPUB | |
| 16 | 192 | (((helical or spiral) same (crossed or cross or overlapping or | USPAT; | 2004/06/30 12:50 |
| | | overlapped) same reinforc\$) and rib\$) not (shaft and ((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$)) | | |
| 17 | 11 | ("2747007" "2896006" "3224905" "3266935" "3287248" | USPAT | 2004/06/30 12:49 |
| | | "3503807" "3619319" "3972728" "4048399" "4140839" | | |
| | | "4144115").PN. | | |
| 18 | 474 | | USPAT; | 2004/06/30 12:50 |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$)) | Trop . T | 2004/05/20 12 50 |
| 19 | 742 | | USPAT; | 2004/06/30 12:50 |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | , |
| 20 | 2560 | reinforc\$))) or ((138/130).CCLS.) | USPAT; | 2004/06/30 12:50 |
| 20 | 2569 | ((((138/125) or (138/153) or (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | 2004/00/30 12.30 |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | 03-10101 | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.)) | - | |
| 21 | 602 | | USPAT; | 2004/06/30 12:50 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | - |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | : |
| | | ((138/130).CCLS.))) and (helical or spiral) | | |

| 22 | 1440 | ((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 12:51 |
|-----|------|---|-----------|-------------------|
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | 200 1100.50 12.51 |
| | , | spiral) same (crossed or cross or overlapping or overlapped) same | | · |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or | | { |
| | 7.0 | overlapped) | TIGD A CO | |
| 23 | 762 | | USPAT; | 2004/06/30 12:51 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or | | |
| | | overlapped)) and reinforc\$ | | |
| 24 | 45 | ** // | USPAT; | 2004/06/30 12:51 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or | | |
| | | overlapped)) and ((helical or spiral) same (crossed or cross or | | |
| 2.5 | 4.5 | overlapping or overlapped) same reinforc\$) | LIODAT | 2004/07/20 12 52 |
| 25 | 45 | | USPAT; | 2004/06/30 12:53 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or spiral) same (crossed or cross or overlapping or overlapped) same | US-PGPUB | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$) | | |
| 26 | 557 | (((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:09 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (helical or spiral)) not (((((138/125) or | | |
| | | (138/153) or (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) not (((((helical or spiral) same (crossed or cross | | : |
| | : | or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft | | |
| | | and ((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$))) or ((138/130).CCLS.))) and ((helical | | |
| | | or spiral) same (crossed or cross or overlapping or overlapped) same | | : |
| | | reinforc\$)) | | |
| 27 | 8 | ("0219596" "0882292" "1011090" "2747616" "2934096" | USPAT | 2004/06/30 13:08 |
| | | "3166319" "3177900" "3500867").PN. | | 0001/05/50 55 55 |
| 28 | 602 | (((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:09 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (helical or spiral)) or (((((138/125) or | | |
| | | (138/153) or (138/104)).CCLS.) or ((428/36.91).CCLS.) or | | |
| | | ((138/122).CCLS.)) not (((((helical or spiral) same (crossed or cross | | |
| | , | or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft | | : |
| | | and ((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$))) or ((138/130).CCLS.))) and ((helical | | |
| | | or spiral) same (crossed or cross or overlapping or overlapped) same | | |
| |] | reinforc\$)) | | |

| 29 | 438 | ((((((((((((((((((((((((((((((((((((((| USPAT; US-PGPUB | 2004/06/30 13:14 |
|----|---------------------------------------|---|--------------------|------------------|
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or overlapped)) and reinforc\$) not ((((((138/125) or (138/153) or | | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (helical or spiral)) or | | |
| | | ((((((138/125) or (138/153) or (138/104)).CCLS.) or | | |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or spiral) same (crossed or cross or overlapping or overlapped) same | | 1 |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$))) | | |
| 30 | 1040 | ((((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:15 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or overlapped)) and reinforc\$) or ((((((138/125) or (138/153) or | , | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | - |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (helical or spiral)) or | | |
| | | ((((((138/125) or (138/153) or (138/104)).CCLS.) or | | |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | * * * * * * * * * * * * * * * * * * * | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$))) | | |
| 31 | 510 | (((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:20 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or spiral) same (crossed or cross or overlapping or overlapped) same | US-PGPUB | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| • | | ((138/130).CCLS.))) and (crossed or cross or overlapping or overlapped)) not (((((((138/125) or (138/153) or | | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (crossed or cross or | | |
| | | overlapping or overlapped)) and reinforc\$) or (((((((138/125) or (138/153) or (138/104)).CCLS.) or ((428/36.91).CCLS.) or | | |
| | | ((138/122).CCLS.)) not (((((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft | | |
| | | and ((helical or spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$))) or ((138/130).CCLS.))) and (helical | | 1 |
| | | or spiral)) or ((((((138/125) or (138/153) or (138/104)).CCLS.) or | | |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not (((((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$)))) | | J |

| 32 | 1550 | (((((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:20 |
|-----|---------|---|----------|------------------|
| J.2 | 1550 | (((((136/123) 61 (136/133) 61 (136/164)).CCLS.)) not ((((helical or | US-PGPUB | 2004/00/30 13.20 |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or | | |
| | | overlapped)) or ((((((((138/125) or (138/153) or (138/104)).CCLS.) | } | |
| | | or ((428/36.91).CCLS.) or ((138/122).CCLS.)) not (((((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and (crossed or cross or overlapping or | ! | |
| | | overlapped)) and reinforc\$) or (((((((138/125) or (138/153) or (138/15 | | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | • | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (helical or spiral)) or | | |
| | | (((((((138/125) or (138/153) or (138/104)).CCLS.) or | | |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | + | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$)))) | | |
| 33 | 1019 | (((((138/125) or (138/153) or (138/104)).CCLS.) or | USPAT; | 2004/06/30 13:20 |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | US-PGPUB | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) not ((((((138/125) or (138/153) or | | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (crossed or cross or | | |
| | | overlapping or overlapped)) or ((((((((138/125) or (138/153) or | 1 | |
| | | (138/104)).CCLS.) or ((428/36.91).CCLS.) or ((138/122).CCLS.)) | | |
| | | not (((((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$) and rib\$) or (shaft and ((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | | reinforc\$))) or ((138/130).CCLS.))) and (crossed or cross or | | |
| | | overlapping or overlapped)) and reinforc\$) or (((((((138/125) or | | |
| | 1 | (138/153) or (138/104)).CCLS.) or ((428/36.91).CCLS.) or | | 7 |
| | | ((138/122).CCLS.)) not (((((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$) and rib\$) or (shaft | | |
| | | and ((helical or spiral) same (crossed or cross or overlapping or | | |
| | | overlapped) same reinforc\$))) or ((138/130).CCLS.))) and (helical | | |
| | | or spiral)) or ((((((138/125) or (138/153) or (138/104)).CCLS.) or | | |
| | | ((428/36.91).CCLS.) or ((138/122).CCLS.)) not ((((helical or | | |
| | | spiral) same (crossed or cross or overlapping or overlapped) same | | |
| | ļ | reinforc\$) and rib\$) or (shaft and ((helical or spiral) same (crossed | | |
| | | or cross or overlapping or overlapped) same reinforc\$))) or | | |
| | | ((138/130).CCLS.))) and ((helical or spiral) same (crossed or cross | | |
| | | or overlapping or overlapped) same reinforc\$))))) | | |
| | <u></u> | | I | I |